



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,925	12/31/2001	Harald Timm	19086.3	5898

7590 11/03/2004  
Lichti, Lempert, & Lasch  
Bergwaldstr. 1  
Karlsruhe, D-76227  
GERMANY

EXAMINER

DUNWOODY, AARON M

ART UNIT PAPER NUMBER

3679

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/029,925

Applicant(s)

TIMM, HARALD

Examiner

Aaron M Dunwoody

Art Unit

3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,7,8,10-13,16 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,7,8,10-13,16 and 21-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 7, 8, 12, 13 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 4712642, Lalikos et al.

In regards to claims 1 and 25, in Figures 3 below, Lalikos et al discloses a bent (inherent) pipe element made of metal for bending pipe sections and for return pipes in internal combustion automobile engines, the pipe element comprising

a first set of undulations having a first outer diameter; and

a second set of undulations having a second outer diameter which is less than the first outer diameter, the first and the second sets of undulations being disposed one behind the other in a longitudinal extension of the pipe element,

wherein the second set of undulations is interposed between neighboring pairs of the first set of undulations and the first set of undulations is interposed between neighboring pairs of the second set of undulations,

wherein, in an unbent state of the pipe element, each of the first set of undulations extends through a convex, substantially circular first arc and joins a first straight segment extending substantially transverse to the longitudinal extension of the pipe element, the first straight segment joining a concave, substantially circular second

Art Unit: 3679

arc, the second arc joining a second segment, the second segment joining onto a neighboring one of the second set of undulations extending through a convex, substantially circular third arc, the third arc joining a third segment, the third segment joining a concave, substantially circular fourth arc, the fourth arc joining a fourth straight segment extending substantially parallel to the first straight segment, the fourth straight segment joining a neighboring one of the first set of undulations having the first arc, wherein the first arc, the second arc, the third arc, and the fourth arc have substantially equal radii of curvature.

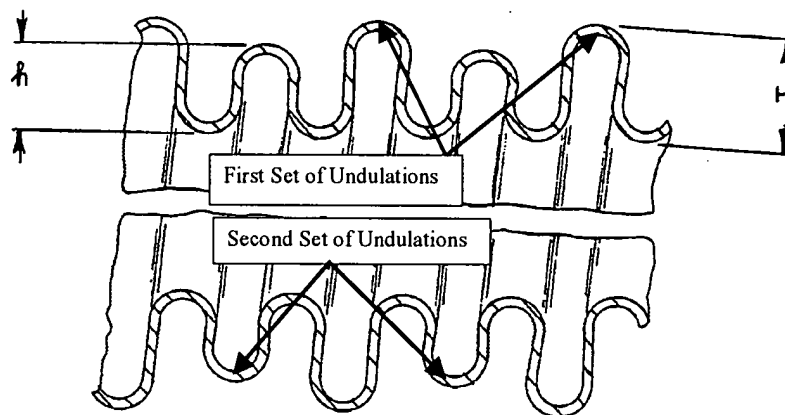


FIG. 3

Lalikos et al does not disclose the first outer diameter of the first set of undulations exceeding the second outer diameter of the second set of undulations by 5% to 20%, relative to the second outer diameter; or the first outer diameter exceeding the second outer diameter by 10% to 15%, relative to the second outer diameter. It would have been obvious to one having ordinary skill in the art at the time the invention was made

Art Unit: 3679

to fabricate the first outer diameter of the first set of undulations to exceed the second outer diameter of the second set of undulations by 5% to 20%, relative to the second outer diameter; or fabricate the first outer diameter so as to exceed the second outer diameter by 10% to 15%, relative to the second outer diameter, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

In regards to claim 7, Lalikos et al discloses in the unbent pipe element, an inner radius and an outer radius of the first and the second set of undulations describing circular arcs of between 175° to 230°.

In regards to claims 8 and 25, Lalikos et al discloses in the unbent pipe element, an inner radius and an outer radius of the first and the second set of undulations describing a circular arc of approximately 180°.

In regards to claims 12 and 13, Lalikos et al discloses the claimed invention except for the first and the second sets of undulations being fashioned from a wall thickness of between 0.2mm and 0.5mm, or the first and the second sets of undulations being fashioned from a wall thickness of approximately 0.4mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the first and the second sets of undulations from a wall thickness of between 0.2mm and 0.5mm, or fabricate the first and the second sets of undulations from a wall thickness of approximately 0.4mm, since it has been held that discovering an optimum

Art Unit: 3679

value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 10, 11, 16 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lalikos et al in view of US patent 4458722, Dahn.

In regards to claims 10 and 21, Lalikos et al discloses the claimed invention except for straight sections being disposed in the unbent pipe element between the inner and outer radius of the approximately circular segment shaped first and second sets of undulations, or substantially cylindrical, non-undulated connecting ends. Dahn discloses straight sections (25, 26) being disposed in the unbent pipe element (10) between undulations (11,16), and substantially cylindrical, non-undulated connecting ends (25, 26) to connect with the exhaust system of an automobile. It would have been obvious to one having ordinary art at the time the invention was made to fabricate straight sections disposed in the unbent pipe element between undulations, and fabricate substantially cylindrical, non-undulated connecting ends to connect with the exhaust system of an automobile.

In regards to claims 11 and 22, Lalikos et al in view of Dahn discloses the claimed invention except for an average outer diameter of the first and the second sets of undulations exceeding an outer diameter of the connecting ends by 10% to 35%, relative to the outer diameter of the connecting ends. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate an average outer diameter of the first and the second sets of undulations to exceed an

Art Unit: 3679

outer diameter of the connecting ends by 10% to 35%, relative to the outer diameter of the connecting ends, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

In regards to claim 16, Lalikos et al discloses the claimed invention except for the first outer diameter of the first set of undulations exceeding the second outer diameter of the second set of undulations by 5% to 20%, relative to the second outer diameter; or the first outer diameter exceeding the second outer diameter by 10% to 15%, relative to the second outer diameter. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the first outer diameter of the first set of undulations to exceed the second outer diameter of the second set of undulations by 5% to 20%, relative to the second outer diameter; or fabricate the first outer diameter so as to exceed the second outer diameter by 10% to 15%, relative to the second outer diameter, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

In regards to claims 23 and 24, Lalikos et al discloses the claimed invention except for the first and the second sets of undulations being fashioned from a wall thickness of between 0.2mm and 0.5mm, or the first and the second sets of undulations being fashioned from a wall thickness of approximately 0.4mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the first and the second sets of undulations from a wall thickness of between

Art Unit: 3679

0.2mm and 0.5mm, or fabricate the first and the second sets of undulations from a wall thickness of approximately 0.4mm, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### ***Response to Arguments***

Applicant's arguments filed 8/16/2004 have been fully considered but they are not persuasive. The Applicant argues Lalikos et al do not disclose a bent pipe element. The Examiner disagrees. Lalikos et al recite:

This invention provides a flexible metal conduit assembly primarily for use with a high temperature transfer of fluid, such as the conduits used in engine exhaust systems or in steam lines that are subject to extreme vibration or flexure. In these and similar installations, there is a substantial movement between the ends of the assembly at both very low and very high frequencies, as a result of mechanical vibrations and of the related resonances. There is also a movement due to thermal expansion and a contraction and due to normal operational displacements of parts. For example, a conduit connecting the engine exhaust manifold to the catalytic converter of an automobile may be exposed to an extreme vibration and intermittent heavy resonance up to frequencies of 500 hertz and sometimes more. There may be offset movements in the order of one inch displacements in three planes due to mechanical vibrations and to expansion caused by exhaust gas at temperatures that may reach 1500.degree. F. and more.

This means that the invention of Lalikos et al inherently is a bent pipe element; therefore, Lalikos et al met the claim limitation.



***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

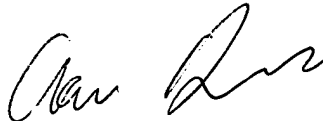
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron M Dunwoody whose telephone number is 703-306-3436. The examiner can normally be reached on 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P Stodola can be reached on 703-306-5771. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3679

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Aaron M Dunwoody  
Examiner  
Art Unit 3679

.amd